REMARKS

Claims 1, 3-10 and 12-16 are pending in the present application. Claims 1, 7 and 14 are in independent form. Claims 1, 6 and 7 are amended. Claims 12-16 are newly-added. Claims 2 and 11 are cancelled. In view of the above amendments and the following remarks, favorable reconsideration and allowance of the present application is respectfully requested.

I.   STATEMENT REGARDING SUBSTANCE OF INTERVIEW

In response to the Interview Summary mailed on December 24, 2009, the following statement regarding the substance of the interview is respectfully submitted in response to the December 18, 2009 personal interview between Examiner Cameron Saadat and Applicants' representative, Crystal Wilson (Reg. No. 61,730).

During the interview, Applicants' representative discussed how Anderson fails to teach that a simulated fluid flow change results from a change in the geometry of a vessel, if a tool is expanded. The Examiner stated that deploying the device of Anderson would cause an inherent change in the simulated vessel, and thereby cause a change in the simulated blood flow. The Examiner suggested that Applicants consider amending the independent claims to in order to clarify how the claimed "simulated fluid flow change" differs from the change that is inherent in Anderson.

II.   CLAIM AMENDMENTS

By the present Amendment, claims 1, 6 and 7 are amended. Claims 12-16 are newly-added. The amendments to claims 1 and 7 are supported, at least, by the subject matter recited in original claims 2 and 11. Newly-added claims 14 and 15 supported, at least, by page 7, lines 4-11 of the Specification. Claims 12, 13 and 16 are supported, at least, by page 5, lines 8-12 of the Specification.

Thus, Applicants submit that the amendments do not introduce new matter.

III.   CITED ART REJECTIONS

(A)   Claims 1-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson et al. (hereinafter "Anderson"), U.S. Patent No. 7,371,067 B2 in view of Charbel et al. (hereinafter "Charbel"), U.S. Patent No. 7,191,110 B1. Applicants respectfully traverse the rejection.

i.   INDEPENDENT CLAIM 1

Amended independent claim 1 is directed to an interventional procedure simulation system wherein (*inter alia*), when a tool is expanded, a simulated geometry of a vessel changes resulting in a simulated fluid flow change in the simulated vessel, "the system being configured to recursively calculate said simulated fluid flow in the simulated vessel and the fluid flow changes in said adjacent simulated vessels." Applicants submit that

Anderson fails to explicitly teach, or otherwise suggest, the above-identified features recited in amended independent claim 1.

a.   THE COMBINATION OF ANDERSON AND CHARBEL

The Action states that "...Anderson discloses a system that calculates a flow through the hierarchical structure realized as a vessel-tree as a result of its geometry. (Col. 11, lines 48-61)." Action, p. 3.

However, the above passage of Anderson (as cited by the Examiner) states that,

> From the segmented medical images, a central line model of a vasculature can be constructed. This model is represented in hierarchical structure consisting of vessel topology (using a parent-child relationship to represent the topological connectivity among a list of vascular segments), vessel geometry (coordinates and radii), and vessel material property. The 3D model of the vessels is then reconstructed based on the central line geometry. Visual smoothness is achieved by employing operations like sweeping and blending. A variational modeling approach is implemented for vasculature segments. An advantage of such method is that it provides flexibility in changing 3D structure. Where a pathology is identified and measured, a vascular model can be modified to account of pathology.
>
> Anderson, col. 11, lines. 48-61.

Nothing in the above passage teaches, or suggests, that the system according to Anderson is "configured to recursively calculate" (as recited in claim 1) a simulated flow change in the vasculature that results from changes in the geometry of a vessel during deployment of a medical device.

Furthermore, Anderson, which is directed to a system for designing customized, patient-specific medical devices, focuses on the physical compatibility between the device and the vessel. Anderson is not concerned

with the changes in the fluid flowing through the system. Thus, there is no motivation in Anderson to develop a system that is configured to "recursively calculate said simulated fluid flow in the simulated vessel and the fluid flow changes in said adjacent simulated vessels" (as recited in independent claim 1) that results from changes in the geometry of a vessel during deployment of a medical device.

Furthermore, Charbel, directed to an apparatus for modeling circulation in a living subject using computer simulation, fails to teach, or suggest, an apparatus that is "configured to recursively calculate" (as recited in claim 1) a simulated flow change in the vasculature that results from changes in the geometry of a vessel during deployment of a medical device.

Thus, Charbel fails to remedy the above-identified deficiencies of Anderson with respect to independent claim 1.

For at least this reason, Applicants submit that Anderson in view of Charbel fails to explicitly teach, or otherwise suggest, an interventional procedure simulation system wherein (*inter alia*), when a tool is expanded, a simulated geometry of a vessel changes resulting in a simulated fluid flow change in the simulated vessel, "the system being configured to recursively calculate said simulated fluid flow in the simulated vessel and the fluid flow changes in said adjacent simulated vessels" as recited in independent claim 1.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection to independent claim 1, and claims 3-6 at least by virtue of their dependency on independent claim 1.

ii.   INDEPENDENT CLAIM 7

Amended independent claim 7 is directed to a method of simulating flow of a body fluid in an interventional procedure simulation system having a control unit and an interface unit, said control unit being configured to communicate with said interface unit to simulate handling of at least one instrument interfaced by said interface unit, including (*inter alia*) changing a simulated geometry of a simulated vessel resulting in a simulated fluid flow change when said tool is expanded, and "recursively calculating a fluid flow of said vessels having the hierarchical structure until flow and pressure in all branches of said hierarchical structure are solved." Thus, Applicants submit that independent claim 7 is patentable over the combination of Anderson and Charbel for similar reasons as given above with respect to amended independent claim 1.

As such, Applicants respectfully request that the Examiner reconsider and withdraw the rejection to independent claim 7, and claims 8-10 at least by virtue of their dependency on independent claim 7.

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CONCLUSION

Accordingly, in view of the above, reconsideration of the rejections and allowance of each of claims 1, 3-10 and 12-16 in connection with the present application is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) hereby petition for a three (3) month extension of time for filing a reply to the outstanding Office Action and submit the required $555.00 extension fee herewith.

Should there be any matters that need to be resolved in the present application; the Examiner is respectfully requested to contact the undersigned at the telephone number below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By _____
John A. Castellano, Reg. No. 35,094

P.O. Box 8910
Reston, Virginia 20195
(703) 688-8000

JAC/CDW